

### Summary

Disclosed is a Raman amplifier (10) comprising at least one length of fiber (12) and at least a coupler (14) for coupling at least a first pump laser module (16) and a second pump laser module (18) to said Raman amplifying fiber (12), the first pump laser module (16) comprising a frequency discriminator (24) for selecting an optical frequency to be emitted with an optical power exceeding an optical power of remaining optical frequencies that are also emitted by said first pump laser module (16). The first optical frequency is selected to be spaced apart from a local maximum (28; 36; 48) in optical power of said remaining optical frequencies, and the second pump laser module (18) emits at an optical frequency one Stokes-frequency above the frequency of said local maximum (28; 36; 48). The first optical frequency and the frequency of said local maximum are chosen on Stokes-frequency above the signal frequency range. As a consequence, the Raman gain provided in Raman amplifying fiber 12 is broadened.